FEF Puppet Implementation Project

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Motivation

- Managing ~3500 Linux nodes belonging to 10 different experiments.

- FEF consists of 8 sysadmins and 2 managers

- Majority of effort is resolving service requests.

- Using Cfengine and home brew scripts for 6 years.

Issues with current tools

- Poor package management

- No reporting

- Poor dependency management

- Difficult to manage complex configurations

- Difficult to read tool configs

Puppet

- "Puppet is an open source data center automation and configuration management framework."

- Ruby based

- Scalable to thousands of nodes

- Web-based dashboard for reporting

- Hundreds of community developed modules

Puppet

- Very popular; in production at Los Alamos and being evaluated by BNL and US ATLAS.

- We can think of machines in terms of functional roles.

- Fine grained package management

- Reporting tools allow us to audit current state of systems.

- Faster resolution of service requests with fewer errors.

- Better and faster system recovery

HTTPD Example

```
class apache::server {

    package {"httpd:   ensure => running, }

    file {"/etc/httpd/conf/httpd.conf":
        source     => "puppet:///apache/httpd.conf",
        require    => Package["httpd"],
    }

    service {"httpd":
        ensure     => running,
        enabled    => true,
        subscribe  => File["/etc/httpd/conf/httpd.conf"],
    }

~
~
~
~
~
~
~
"/tmp/example.conf" 16L, 350C written
```

root@config...itions — ssh   root@configserver:~ — ssh

UPS Example

```
root@configserver:/opt/puppet/modules/products/manifests/definitions — ssh — 84×26

  root@config...itions — ssh        root@configserver:~ — ssh

define products::fcp ($package_version='v2_3' ) {
    require upsupd_package

    # This variable is used by the install_ups_package.sh.erb template
    $package="fcp"

    # push out the fcp install script
    #
    file {"/etc/fcp_install_${package_version}.sh":
            content  => template("/opt/puppet/modules/products/templates/install
_ups_package.sh.erb"),
            mode => 0750, owner => root, group => root,
            notify   => Exec["run fcp_install ${package_version}"],
            before   => Exec["run fcp_install ${package_version}"],
    }


    # run the fcp install script
    #
    exec {"run fcp_install ${package_version}":
        command   => "sh /etc/fcp_install_${package_version}.sh  > /tmp/fcp_install.
log 2>&1",
        creates   =>  "/fnal/ups/prd/fcp/${package_version}/NULL",
    }

}
```

Puppet Dashboard
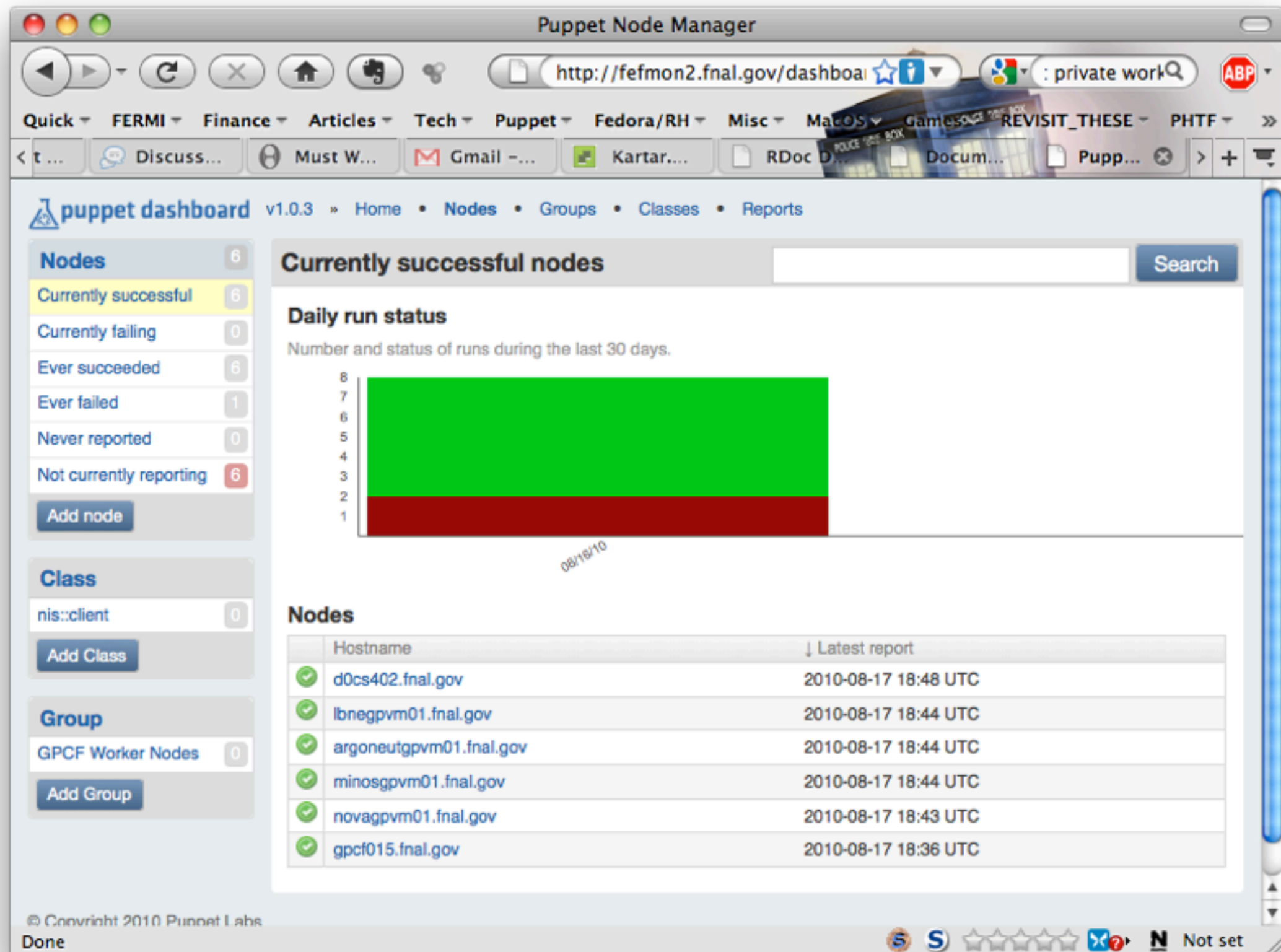
Where we are

- **Complete**: GPCF pilot program

- **Complete**: Scalability testing

- **Complete**: Schema design

- **In progress**: IF experiment migration

- **Sept - Nov**: D0 and CDF Offline migration

Resources

- FEF Configuration Management Tools Comparison DocDB #3967

- FEF Puppet Implementation Overview DocDB #3979

- http://www.puppetlabs.com/puppet/introduction/

- Ed Simmonds